Attachment 3
Work Plan

Introduction. San Ramon Canyon is a natural, typically dry canyon streambed in the City of Rancho Palos Verdes that sits directly north of and above Palos Verdes South (PVDS)/25th Street in the City of Los Angeles. It is surrounded by residential homes to the north, Friendship Park to the east, Palos Verdes Drive East (PVDE) switchbacks to the west, and PVDS/25th Street and 242 mobile homes to the south. Since the 2005 storm events, the canyon has been eroding at an accelerated and alarming rate. During moderate to severe rain events, the canyon conveys storm water runoff generated from the upstream tributary watershed approximately 3,300 feet downstream. It is then directed to a storm drain inlet system at PVDS/25th Street, constructed over 50 years ago, that can now no longer accommodate the water delivered to it. Floodwater, mud and debris overwhelm the inlet and spill out onto PVDS/25th Street, blocking traffic and requiring repeated efforts by the City of Rancho Palos Verdes and the City of Los Angeles to clean up the area. The mud and debris flows, and the resulting cleanup efforts, severely restrict access to the area for both motorists and safety/emergency personnel. Additionally, erosion of the Canyon's edge is now only 86 feet from one of two hairpin turns on Palos Verdes Drive East (PVDE). Future rain events will continue to erode the canyon wall, resulting in eventual failure of the PVDE roadway and adjacent sewer line. Due to topographic and soil characteristics of the land supporting the road, immediate reconstruction will be impossible. Of even greater concern is the potential for floodwater, mud and debris to move completely across PVDS/25th Street, breach a garden wall on the south side of the street, and inundate a downstream mobile home park. This scenario could cause catastrophic losses to property and life for over 500 senior citizens living in 242 homes directly below the canyon.

Figure 1 – San Ramon Canyon area.

Goals and Objectives. The primary objective of the San Ramon Canyon Stormwater Flood Reduction Project is to ***manage stormwater runoff to reduce flood damage*** in the area. The selected project will also achieve the following objectives:

1) ***Diminish erosion and undercutting in the canyon to protect PVDE switchbacks and adjacent sewer line.***
2) ***Substantially reduce the amount of flow being delivered to the existing, and overwhelmed, storm drain at PVDS/25th Street.***
3) ***Improve water quality by substantially reducing erosion and minimizing debris transport to allow "clear water" flows to reach the existing storm drain at 25th Street, which flows into the ocean.***
4) ***Better accommodate flow from the side slopes within the canyon. Restore and protect the existing streambed and the surrounding ecosystem.***
5) ***Provide the highest level of flood protection with the lowest amount of environmental impact.***

To address these serious threats, the City of Rancho Palos Verdes commissioned a Project Study Report (PSR) in March, 2010 by independent consultant, Harris & Associates. The purpose of the study was to research and report on the geotechnical requirements, hydrology and environmental issues affecting the area, and to develop a number of alternative storm drain design scenarios.

Purpose and Need. The need for this storm drain project has been prompted by the episodic flooding of PVDS/25th Street that occurs during moderate to heavy rainfall periods, and the concern for the safety of downstream life and property, and the stability of PVDE. The flooding of the PVDS/25th Street area is primarily due to the clogged and buried storm drain inlet, which does not readily collect moderate to heavy surface water flows. During a rain event, debris-laden surface water flowing down the canyon bypasses the inlet and spills directly onto the roadway. Accelerated erosion of the canyon and localized slope movement are contributing to the sediment loads, resulting in excessive and unforeseen levels of mud and debris to be washed down the canyon.

Figure 2 – Overwhelmed storm drain inlet at PVDS/25th Street.

Prior to development, San Ramon Canyon extended all the way to the Pacific Ocean. However, during the construction of the PVDS/25th Street embankment over 50 years ago, the lower portion of the canyon (south of PVDS/25th Street) was filled in, the now-buried storm drain inlet and pipe system were installed, and homes were constructed on the fill placed within the canyon.

Figure 3 – Flooding on PVDS/25th Street disrupts traffic and requires repeated cleanup efforts by the City.

The first 1,000 feet of the Canyon's sides and streambed, beginning at the upstream end of the Canyon's existing storm drain outlet, are relatively stable. The next 1,500-feet pass through the dormant South Shore Landslide with unstable, 30-foot high, vertical canyon walls. These vertical walls extend for several hundred feet as they pass through the activeTarapaca Landslide. This landslide is moving westward and is forcing the streambed in that direction, thereby undermining the PVDE switchbacks and a sewer line located adjacent to the roadway. Geologists and engineers conclude that the instability of the canyon translates into probable roadway failure for PVDE within five to seven years at the observed rate of erosion. The Canyon's streambed is now only a mere 86 feet from one of two hairpin turns on PVDE. Erosion of the bank will eventually cause complete roadway failure and timely reconstruction will be impossible.

The last 800-feet of the drainage course navigate what used to be a 25-foot deep canyon. A road culvert was placed in the invert of the canyon, where the PVDS/25th Street embankment was constructed across the canyon. This section of the canyon is now completely filled with debris generated from the canyon and has buried the culvert inlet. The erosive forces of the runoff continue to generate large amounts of debris, which are deposited on PVDS/25th Street during most storms, typically blocking access along the road.

Roadway flooding and debris deposits on PVDS/25th Street have been a problem for area residents and commuters for many years, but it has become much worse in the last few years. Downstream development within the natural drainage path included the installation of a drainage system that did not anticipate or accommodate the amount of debris that is currently generated within the canyon. The inlet system that was originally installed at the base of the roadway fill was extended vertically in the 1990's to provide an inlet conveyance for the water as canyon sediment rose to a level that now matches the adjacent roadway. The localized Tarapaca Landslide began to move shortly after the millennium which significantly increased the amount of debris generated within the Canyon. The low strength of the surface soil in the canyon, near the switchbacks, coupled with the westerly migration of the streambed is a concern specific to the stability of the PVDE switchbacks and adjacent sewer line.

Figure 4 – Current landslide is undermining the PVDE switchbacks and a sewer line located adjacent to the roadway.

The ongoing cycle of stormwater flooding and deposition of rock and mud onto PVDS/25th Street threatens safety of downstream residents in the Palos Verdes Shores Mobile Home Park. Road closures and the cleanup of the water, mud and rock debris is an ongoing maintenance problem that restricts through traffic and emergency access to the Palos Verdes Peninsula. All vehicles, including safety personnel, are prevented from using the roadway until the mud/debris has been cleared. A solution to the continuing stormwater flooding is long overdue.

San Ramon Stormwater Flood Reduction Project Addresses Adopted IRWM Plan's Goals and Objectives. The Greater Los Angeles County Region IRWMP has identified five broad goals for the region. These include improving water supplies and enhancing water supply reliability, improving surface water quality, preserving flood protection, conserving habitat, and expanding recreational access in the Region. The San Ramon Canyon Stormwater Flood Reduction Project directly addresses four of these very important objectives noted in Table 1 on the following page:

Table 1 Goals & Objectives	
Greater Los Angeles County Region IRWMP	***San Ramon Canyon Stormwater Flood Reduction Project***
✓ ***Improve Water Quality***. Comply with water quality regulations by improving the quality of urban and stormwater runoff to reduce or eliminate impairment of the designated beneficial uses of rivers, creeks, beaches, and other bodies of water in the Region.	✓ ***The proposed project will improve water quality*** by diverting moderate to heavy "clear water" runoff upstream of highly-erosive areas to reduce erosion and minimizing debris transport. This "clear water" will flow directly to the ocean in a buried pipeline. It also will provide for a low flow bypass to direct smaller flows and "first flush" through the restored streambed in the canyon, taking advantage of infiltration and biologic pollutant uptake available in a riparian system.
✓ ***Enhance Habitat***. Protect, restore and enhance natural processes and habitats.	✓ ***The proposed project will enhance habitat*** by restoring and protecting the existing streambed and the surrounding ecosystem, providing riparian habitat along the previously-scoured canyon floor.
✓ ***Maintain and enhance public infrastructure related to flood protection, water resources and water quality.*** Support projects that propose to: 1) reduce runoff via onsite best management practices (BMPs); 2) capture and treat urban and stormwater runoff for treatment; 3) expand groundwater recharge; or 4) restore habitat, must also preserve or enhance existing flood protection levels.	✓ ***The proposed project will enhance public infrastructure*** by managing stormwater runoff to reduce flood damage by substantially reducing the amount of flow being delivered to the existing, and frequently overwhelmed, storm drain at PVDS/25th Street. This will diminish undercutting in the canyon to protect PVDE switchbacks and the adjacent sewer, and provide a much higher level of flood protection to PVDS/25th Street and the downstream community.
✓ ***Enhance Open Space and Recreation.*** Increase watershed-friendly recreational space for all communities.	✓ ***The proposed project will enhance open space and recreation*** by restoring the natural area above the cut and cover portion of the pipeline. The City will restore and improve the casual trail that exists from this location to the bluff top, creating a "gateway" to this open space parcel. The City is also in the process of evaluating the development of a trail through the project area to connect Shoreline Park with Friendship Park.
✓ ***Improve Water Supply. Optimize local water resources to reduce the Region's reliance on imported Water.***	Not applicable.

Not only will the San Ramon Canyon Stormwater Flood Reduction Project improve stormwater flood management, but it will improve the quality of storm water runoff, provide for beneficial in-stream flow, restore and protect the natural habitat, and enhance open space and recreation.

Project List:

Single Project. This proposal is a single-project application: The San Ramon Canyon Stormwater Flood Reduction Project.

Project Abstract. The City of Rancho Palos Verdes commissioned a Project Study Report (PSR) in March, 2010, to research and report on the geotechnical requirements, hydrology and environmental issues affecting the area, and to develop a number of alternative storm drain design scenarios (see Appendix A for details of PSR). The terms of the PSR assignment required at least three alternative designs and assessment of each on a number of criteria including effectiveness of the design concept, constructability, geological feasibility, coordinating with other agencies, environmental impacts and required mitigation, schedule, cost and others. Six alternatives were investigated, including a do-nothing option, leaving the canyon in an "as-is" condition, and another "cheap-fix" upgrade solution for the existing system. The conclusion reached was that Alternative 1A is the preferred design. Although estimated to be 7% more costly than the lowest cost feasible solution, the design is infinitely superior and has far fewer administrative, environmental and uncertainty issues associated with it.

Proposed Project Detail: The proposed project consists of the construction of a mid-canyon inlet structure, located slightly upstream of the upper switchback along PVDE and the highly-erodible section of the canyon. The inlet structure is connected to shoreline outfall with a 3,900-foot long, 54-inch pipe in a "tunnel alignment" that outlets below the oceanfront bluffs (see Figure 5). The entire length of this storm drain (SD) alignment falls within the City of Rancho Palos Verdes (RPV) allowing RPV sole jurisdiction. Furthermore, the alignment is almost entirely within city-owned land, requiring only small maintenance and construction easements. The inlet structure will be located in the "middle" of San Ramon Canyon, which will intercept flood waters north of the Tarapaca Landslide. The storm drain conveys flows from the inlet structure southwesterly through a tunnel approximately 1,900-feet in length to a point just south of PVDS. From there, the next 1,700-feet of the pipeline will be constructed, using the standard open trench (cut and cover) type of construction running parallel to the City boundary adjacent to Palos Verdes Shores Mobile Home Park in the City of Los Angeles. The pipe will be installed within an existing dedicated 100-foot-wide utility easement within Palos Verdes Shoreline Park that was specifically set aside for utilities such as this proposed storm drain. The 100-foot-wide easement has less strict environmental impact mitigation requirements, serves as a firebreak for the adjacent mobile home

Figure 5 – Overview of project design.

park, and includes an informal hiking trail to the ocean, which will be further enhanced by this project. The final 300-feet of pipe from the bluff top to the beach will run in a 38% sloped "slant drain" tunnel to an outlet structure located at the base of the bluff. The portion of the canyon downstream of the mid-canyon inlet structure, which runs through the Tarapaca landslide, will be back-filled up to 30-feet deep with dirt. This gravity buttress will restore the streambed to its former elevation, and will stabilize both the canyon side slopes. This portion of the canyon would convey side slope run-off along an engineered, natural, predominantly soft-bottom creek bed. An access road from PVDE along the westerly side of the canyon would be constructed above and adjacent to the creek bed to provide access for maintenance of the upstream inlet structure.

Design Status: Project Study Report and Preliminary Engineering are complete. Design is 30% complete according to the PSP definition. Environmental work is 60% complete. Final Design and construction documents are underway. Final Design is expected to be completed by fall 2011/early winter.

Implementing Agency Status: The City of Rancho Palos Verdes is the only implementing agency involved in this project.

Integrated Elements of Projects: Not applicable. This is a single-project application.

Regional Map: The following four maps show the location of the San Ramon Canyon Stormwater Flood Reduction project in relation to the State Plan Flood Control (SPFC) Area (Figure 6); the Greater Los Angeles Area Integrated Regional Water Management area (Figure 7); the South Bay Watershed (Figure 8) and to regional and local drainage systems; and major water bodies and streams (Figure 9).

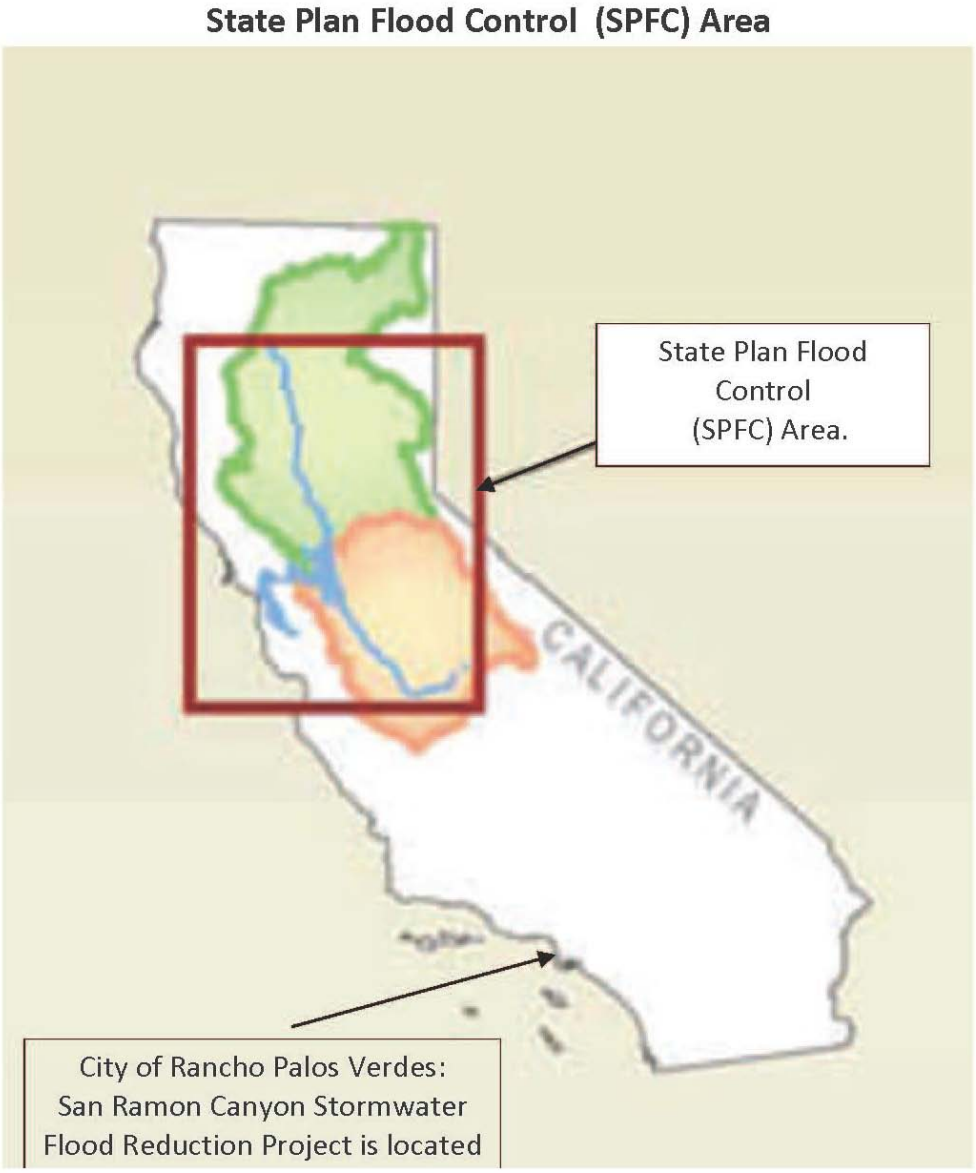

Figure 6 – San Ramon Canyon Project in relation to the State Plan Flood Control (SPFC) Area.

Figure 7 – San Ramon Canyon Project in relation to the Greater Los Angeles Area IRWMP.

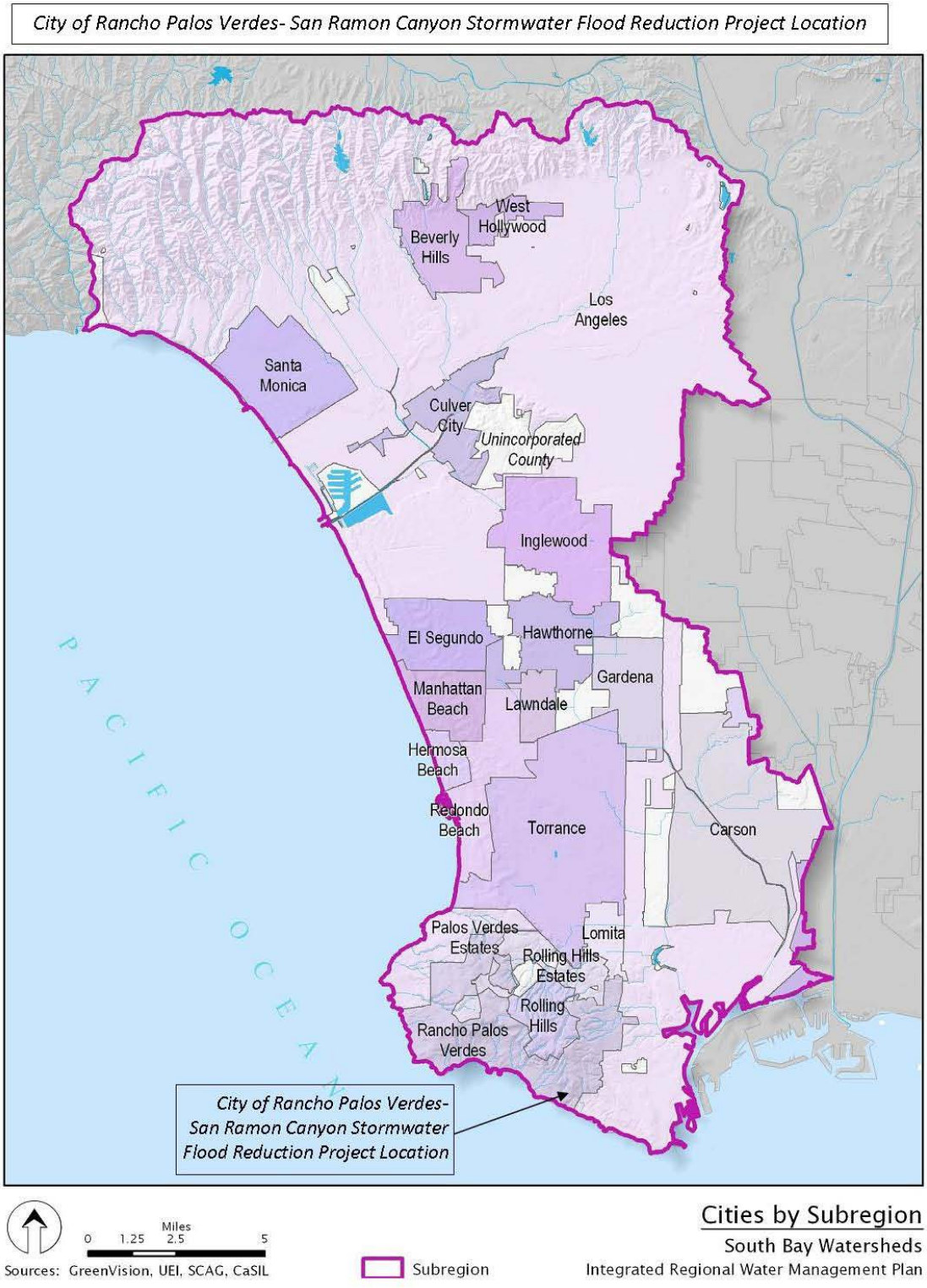

Figure 8 - San Ramon Canyon Project in relation to the South Bay Watersheds.

Figure 9 - San Ramon Canyon Project in relation to rivers, streams and major water bodies.

Completed Work/Existing Data & Studies: The following work has been completed that is integral to this project:

- ***Project Study Report.*** Completed January 11, 2011. The purpose of this study was to develop a detailed topographical survey, geological investigation and report, a biological review, an environmental study, development of several alternative storm drainage designs for consideration, and respective budgets for review. The PSR evaluated the designs and provided a recommendation for the most suitable alternative (PSR pg. 1-34--see Appendix A for details).
- ***Hydrology Report.*** A hydrology and hydraulics analysis was performed on the existing City of Los Angeles storm drain that begins at 25th Street and runs to the ocean discharge point on the bluff. The report concluded the drain was technically adequate but that several significant issues must be addressed if a solution is selected that allows improved canyon flow into the system. (PSR pg. 13-16--see Appendix A for details).
- ***Geotechnical Requirements***. All proposed design alternatives were reviewed for geotechnical requirements and were considered feasible as long as the recommendations in the report are followed (PSR pg. 19-20--see Appendix A for details).
- ***Expanded Initial Study (EIS).*** An EIS was conducted to review and address environmental impacts associated with the planning, construction and operation of storm drain improvements designed to convey the 50- and 100-year storm flood flows from the San Ramon Canyon (Pg 17, PSR--see Appendix A for details). An EIS Checklist has been prepared in compliance with the

California Environmental Quality Act of 1970 (CEQA) and the recommended alternative will move forward with the appropriate Mitigated Negative Declaration or Environmental Impact Report. (PSR pg. 17-19). Per the EIS, there are no riparian plant species, hydric soils or conducive hydrology to support a wetlands habitat within the affected project area. However, San Ramon Canyon is still a jurisdictional drainage course that is under the jurisdiction of the Army Corp of Engineers (ACOE) as part of the River and Harbors Act. It is also under the jurisdiction of the California Department of Fish and Game (CDFG) and the Los Angeles Regional Water Quality Control Board (LARWQCB). If a drainage alternative is chosen that would put an outlet structure on the beach it will come under the jurisdiction of the ACOE (again as part of the River and Harbors Act) and the LARWQCB. Permits from these agencies will likely be required for impacts to jurisdictional waters. Impacts to biological species and habitat will be mitigated through the Natural Community Conservation Plan (NCCP) (PSR, pg. 17-19--see Appendix A for details).

Project Map. The San Ramon Canyon Project falls within the jurisdiction of the City of Rancho Palos Verdes (RPV) and is generally bounded by:

- Northwest: Palos Verdes Drive East (PVDE "switchbacks" (RPV)
- Southwest: Palos Verdes shoreline park/Open Space (RPV)
- South and Southeast: Palos Verdes Shores Mobile Home Park (242 homes) & Golf course (City of LA) and the Pacific Ocean
- Northeast: Friendship County Park (LA County-owned/RPV) & Tarapaca Road (RPV, residential)
- North: Calle Aventura, PVDE and San Ramon Drive (RPV, residential)

Please see Figures 10 and 11 on the following pages for specific details.

Figure 10 - San Ramon Canyon Stormwater Flood Reduction Project worksite location.

San Ramon Canyon
Stormwater Flood Reduction Project Location

Figure 11 – San Ramon Canyon Stormwater Flood Reduction Project location detail.

Project Specifics. The San Ramon Canyon Stormwater Flood Reduction Project is a stand-alone project located in the southwestern coastal region of the Greater Los Angeles County Integrated Regional Water Management Group. The project is not part of the State Plan of Flood Control (SPFC) area (see Figure 6 above for reference), and it does not interconnect with other stormwater/sewage conveyance systems. Additionally, it is not associated with the Sacramento River or San Joaquin River Flood Control System.

Project Timing and Phasing. The San Ramon Canyon Stormwater Flood Reduction Project is a stand-alone project scheduled for construction beginning March, 2012. No other projects are essential to obtain the full benefits of the proposal.

Work Plan Tasks: See Table 2 on next page for Work Plan details.

Table 2 San Ramon Canyon Stormwater Flood Reduction Project Work Plan		
	High-Level Activities/Milestones	**Deliverables**
	Budget Category (a): Direct Project Administration Costs	
	Task 1: Administration. **Grant Administration** – Receive, review and execute grant agreement; process grant request for reimbursements; maintain all grant files; coordinate quarterly internal all-hands grant meetings to ensure that grant is being properly executed; responsible for records retention; quarterly reports; final reports, audit requests; ensuring local match funds are budgeted for and available; report to City Council on status of grant funds; attend requested meetings and inquiries by DWR; ensure that grant agreement requirements are adhered to by all city staff and contractors. **Standards:** Will perform all activities in adherence to Generally Accepted Accounting Principles and the State of California Dept. of Finance rules and regulations that govern fiscal municipal finance departments. **Project Administration** – Responsible for all aspects of project complying with grant requirements; approve contractor invoices and submit to grant administration; oversee all aspects of project; oversee subcontractors; ensure project stays on schedule and on budget; facilitate review of submittals to ensure that materials used comply with that specified; facilitate responses to requests for information from contractor; report to city council on progress of project and report any impediments to success; assist in completing quarterly and final reports; coordinate and lead all weekly meetings with contractors associated with project; onsite throughout the life of project; ensure required inspections are performed and reports reviewed. Provide quality assurance measures are employed and oversight of Construction Manager (CM). **Standards:** Will follow APWA, ACES and City-specific standards. For construction and construction management, the following standards will be followed: all Best Management Practices applicable to Stormwater Management; CalOSHA regulations; project specifications; labor compliance; inspection schedules and logs; document changes and modifications as necessary. **Performance Measures and Monitoring Plan/Data Management and Monitoring Deliverables for Project** – PM responsible for developing appropriate Performance Measures and Monitoring Plan in accordance with the agreements established with DWR in the Grant Agreement. The PM will be responsible for measuring success and reporting same to DWR. **Status:** Activities will be conducted upon grant award.	- Submission of Quarterly reports and Final reports. - Individual request for reimbursements. - Meeting minutes. - City Council staff reports. - All records-retention required in Appendix E of Prop 1E Guidelines. - Performance Measures and Monitoring Plan document and subsequent progress reports. - Data Management and Monitoring Deliverables consistent with IRWM Plan Standards and Guidance.
	Task 2: Labor Compliance Program. Construction Manager (CM), or designated person, to collect and compare data from daily records of project workers from information supplied by Contractor weekly. Information to be filled into a form to compare wage information/benefits with published rates and to demonstrate that correct process has been followed. Designee will also conduct random	- Submission of weekly Labor Compliance reports. - Department of Industrial Relations forms and reports, as required.

Table 2 San Ramon Canyon Stormwater Flood Reduction Project Work Plan		
	High-Level Activities/Milestones	**Deliverables**
	interviews with workers to ensure they are being paid in accordance with certified payrolls supplied by Contractor. **Standards:** Davis Bacon wage rates and/or appropriate state prevailing wage rates will be used to compare actual wages paid plus benefits for each class of worker. Specific wage determination publication specified in bid documents will be the determining wage rate for the project. **Status:** Determination will be written into specifications, which will be written after 90% design phase has been completed.	
	Task 3: Reporting. PM responsible for submitting quarterly progress reports and final reports as identified by the guidelines of the grant process noted in Appendix E, pg. 78 of Prop. 1E Guidelines. **Standards:** As established by DWR Grant Agreement. **Status:** Will commence upon execution of Grant Agreement.	- Submission of Quarterly, Annual and Final reports to DWR as specified in the Grant Agreement.
	Budget Category (b): Land Purchase/Easement (See Task 5 for details)	
	Budget Category (c): Planning/Design/Engineering/Environmental Documentation	
	Task 4: Assessment and Evaluation - ***Project Study Report (PSR).*** Completed January 11, 2011. Purpose of study was to develop a detailed topographical survey, geological investigation and report, a biological review, an environmental study, development of several alternative storm drainage designs for consideration, and respective budgets for review. PSR evaluated designs based on a number of criteria including environmental considerations and cost, and provided a recommendation for the most suitable alternative (PSR pg. 1-34—see Appendix A for details). - ***Hydrology Report.*** A hydrology and hydraulics analysis was performed on the existing City of Los Angeles storm drain that begins immediately up-stream of 25th Street and runs to the ocean discharge point on the bluff. The report concluded the drain was technically adequate for clear water but that several significant issues must be addressed if a solution is selected that allows improved canyon flow into the system. (PSR pg. 13-16—see Appendix A for details). - ***Geotechnical Requirements***. All proposed design alternatives were reviewed for geotechnical requirements and were considered feasible as long as the recommendations in the report were followed (PSR pg. 19-20—see Appendix A for details). **Status**: All reports above have been completed.	- Submission of Project Study Report, Hydrology Report, and Geotechnical Requirements (complete).
	Task 5: PS&E/Final Design (Track 1 – Sewer Relocation and Track 2 – Storm Drain). Two designs will be developed: Track 1 for sewer relocation construction in March, 2012 and Track 2 for Storm Drain location construction in March, 2013. PM for both projects will develop and issue Request for Qualifications; review and evaluate proposals; conduct negotiations and contract awards with design consultants; obtain Council	- Submission of new or change order proposals. - Executed contracts with design team. - Completion of project plans and specifications

Table 2
San Ramon Canyon Stormwater Flood Reduction Project
Work Plan

	High-Level Activities/Milestones	Deliverables
	approval; provide kick-off meeting with design consultant; develop design to 90 percent and final. **Status:** Track 1 – Sewer design underway as of March, 2011. **Easements.** Develop storm drain easement within existing dedicated 100-foot-wide utility easement; record easements to approximately two, or possibly three, properties located near upper PVDE switchback on eastern side of canyon which extends into the canyon to the stream bed. A very small area of each of the properties, in an unusable location, will be required. The City does not foresee any problem with obtaining easements; record temporary construction easement for private property up-stream of PVDS/25th Street to provide access to worksite. **Status:** Easements to be acquired once preliminary designs are 60% final.	at the 90 percent and final level. - Submission of Easement Legal Description. - Cost estimates.
	Task 6: Environmental Documentation. Expanded Initial Study (EIS) completed. Required permits identified (see below in Task 7 - Permitting); anticipated draft Mitigated Negative Declaration and Finding of No Significant Impact (FONSI) to be submitted; Public review of MND or FONSI expected to take 30 days; response to comments, Final IS/EA and MND/FONSI, and Mitigation Monitoring and Reporting Plan (MMRP) to be developed. Per the EIS, there are no riparian plant species, hydric soils or conducive hydrology to support a wetlands habitat within the affected project area. However, San Ramon Canyon is still a jurisdictional drainage course that is under the jurisdiction of the Army Corp of Engineers (ACOE) as part of the River and Harbors Act. It is also under the jurisdiction of the California Department of Fish and Game (CDFG) and the Los Angeles Regional Water Quality Control Board (LARWQCB). A drainage alternative that puts an outlet structure on the beach will come under the jurisdiction of the ACOE (again as part of the River and Harbors Act) and the LARWQCB. Permits from these agencies will likely be required for impacts to jurisdictional waters. Impacts to biological species and habitat will be mitigated through the Natural Community Conservation Plan (NCCP) **Standards:** The EIS Checklist was prepared in compliance with the California Environmental Quality Act of 1970 (CEQA). The balance of the environmental requirements will be completed in accordance with same. **Status:** Environmental documentation to be submitted to regulating agencies once basic design has reached a stage where major components are unlikely to be changed (anticipate November, 2011). **Reference:** PSR pg. 17-19—see Appendix A for details.	- Approved and adopted CEQA/NEPA documentation. - Submission of Mitigated Negative Declaration per CEQA and Finding of No Significant Impact (FONSI) per NEPA.
	Task 7: Permitting. The following permits will be obtained: *Army Corp of Engineers (ACOE):* Section 9 and 10 of Rivers and Harbors Act will likely require Section 10 permit; *California Department Fish and Game (CDFG)*: a CDFG 1602 permit will be required along with a 401 permit; *Los Angles Regional Water quality Control Board (LARWQCB):* Permanent Best Management Practices (BMP's) will be required along with a National Pollutant Discharge Elimination System (NPDES) construction document	- Permits to be issued: Section USACOE 404 Permit, CWA 401 Certification, DFG 1600, CRM-10 expected.

Table 2 San Ramon Canyon Stormwater Flood Reduction Project Work Plan		
	High-Level Activities/Milestones	**Deliverables**
	as part of the LARWQCB requirements or as part of LAC Municipal Separate Storm Sewer System (MS4) Permit; *Coastal Resource Management (CRM) District:* construction area lies within the CRM District with a terrestrial designation CRM-10. All marine resources are to be protected against construction impacts; *City Natural Community Conservation Plan (NCCP):* anticipated loss of habit has already been mitigated (see Task 10 for details). **Status:** Permitting will begin upon 60% design completion. **Reference:** PSR pg. 18 —see Appendix A for details.	
	Budget Category (d): Construction/Implementation	
	Task 8: Construction Contracting. (Track 1 – Sewer Relocation and Track 2 – Storm Drain). Two tracks will be contracted for: Track 1 for sewer relocation construction in March, 2012 and Track 2 for Storm Drain location construction in March, 2013. PM to develop Notice Inviting Bids (NIB); issue NIB, review and evaluate bids, recommend selection, obtain City Council approval; issue contract authorization and Notice to Proceed; host kick-off meeting with selected Contractor(s). **Standards:** Construction activities will be conducted according to the standards of Cal OSHA, American Public Works Association (APWA), American Society of Civil Engineers (ASCE), and the City of Rancho Palos Verdes. **Status:** Track 1 Sewer Relocation contracting to begin in October 2011. Track 2 Storm Drain contracting to begin upon completion of regulatory agency permitting process.	- Advertisement for bids; pre-bid contractors meeting; evaluation of bids; award contract.
	Task 9: Construction - Track 1: Sewer Relocation (begins March, 2012). An existing 8" sewer line located between the canyon and the PVDE switchbacks is in danger of being undermined by the eroding canyon and could be lost in the near future. A design to relocate this sewer into a safer location closer to PVDE is currently in process. This activity is a component of the project that must be undertaken as soon as possible to avoid the significant risk of losing the sewer pipeline before the storm drain is completed. Contractor selection is expected to begin in October, 2011. Environmental approval has already been obtained for this portion of the project. **Subtask 9.1 Award Contract January, 2012.** **Subtask 9.2 Mobilization and Site Preparation.** Prepare detailed program for construction activities; secure necessary bonds, licenses and insurances; convert cost estimate into project budget and establish system for tracking actual project costs; organize project site with provisions for temporary buildings and services, access and delivery, storage areas and site security; obtain materials and equipment for project; initiate and arrange for labor force; source and award larger sub-contractors, specialist sub-contractors and supply contracts; obtain	Statutory permits for construction projects may include: - City of RPV Encroachment Permit. - Mining Permit from CalOSHA. - SWPPP and SWRCB WDID Notification. - Inspection Logs and Test Results.

Table 2 San Ramon Canyon Stormwater Flood Reduction Project Work Plan		
	High-Level Activities/Milestones	**Deliverables**
	written confirmations on issues such as commencement date , possession of site , initial joint survey , receipt of construction drawings , master program, etc. **Subtask 9.3 Prepare NPDES-SWPPP** (National Pollution Discharge Elimination System – Stormwater Pollution Prevention Plan) January, 2012. – A Storm Water Pollution Prevention Plan (SWPPP) will be developed by contractor prior to commencement of any physical work in the field. SWPPP will identify pollution prevention best management practices and activities that contractor must implement. **Subtask 9.4 Project Construction.** The first construction task will be to construct an inlet structure and storm water pipeline from the upper switchback to pipe the storm water flow directly into the canyon. This will allow the existing drainage course gulley above the lower switchback to be filled with engineered backfill. Once the gully has been filled, the sewer will be installed, using an open excavation with a shield, in the new alignment across the filled gulley. On completion of the installation, the sewer will be pressure tested before connecting the existing system with the new alignment. All disturbed areas will be re-vegetated on completion of the pipeline. **Subtask 9.5 Performance Testing and Demobilization.** The sewer will be inspected throughout its installation for conformance to recognized construction practices. In completion of installation of pipeline and before backfilling excavation, the system will be pressure tested to standards prescribed by specifications. Final connections on both ends of pipeline will be made after passing of pressure testing and, at that state, the sewer will be permanently operational. Final punch list items will be addressed and contractor will remove all equipment and waste materials from area. If landscape mitigation is required, it will be completed at this time.	
	Task 10: Construction - Track 2: Storm Drain (begins March, 2013). The larger construction effort will involve the construction of an access road and inlet structure in mid canyon adjacent to the upper PVDE switchback. A 2,000-foot tunnel will be constructed from the inlet structure to a point below PVDS, within Shoreline Park. A conventional pipeline will be laid from that point to the top of the bluff, running within RPV, adjacent to the City Boundary. Another tunnel will be constructed to convey the storm water to the outlet structure on the beach at the toe of the bluff. Negotiations for this design are currently under way with the designer who produced the PSR. **Subtask 10.1 Award Contract March, 2013.** **Subtask 10.2 Mobilization and Site Preparation.** Prepare detailed program for construction activities; secure necessary bonds, licenses and insurances; convert cost estimate into project budget and establish system for tracking actual project costs; organize project site with provisions for temporary buildings and services, access and delivery,	Statutory permits for construction projects may include: - City of Los Angeles Street Encroachment Permit. - City of RPV Encroachment Permit. - Mining Permit from CalOSHA. - SWPPP and SWRCB WDID Notification. - Inspection Logs and Test Results.

Table 2 San Ramon Canyon Stormwater Flood Reduction Project Work Plan		
	High-Level Activities/Milestones	**Deliverables**
	storage areas and site security; obtain materials and equipment for project; initiate and arrange for labor force; source and award larger sub-contractors, specialist sub-contractors and supply contracts; obtain written confirmations on issues such as commencement date , possession of site , initial joint survey , receipt of construction drawings , master program, etc. **Subtask 10.3 Prepare NPDES-SWPPP** (National Pollution Discharge Elimination System – Stormwater Pollution Prevention Plan) January, 2012. – A Storm Water Pollution Prevention Plan (SWPPP) will be developed by contractor prior to commencement of any physical work in the field. SWPPP will identify pollution prevention best management practices and activities that contractor must implement. **Subtask 10.4 Project Construction.** The tunnel section of the pipeline will be constructed up-stream from below PVDS, dug by and using a shield and reinforced ribs to form a large diameter "sleeve". A pipe will be installed and the annular space filled with grout. The conventional pipe line will be installed using the normal cut and cover method for storm drains. The tunnel section to the beach will be similar to the long tunnel. The outlet structure will be constructed with reinforced concrete, built to withstand the corrosive nature of the ocean. An access road will be constructed to the inlet structure in the canyon to provide both construction and maintenance access. The canyon down-stream of the inlet structure will be filled the maximum depth of about 30-feet and the drainage course treated to eliminate future erosion from water flows generated from the down-stream side slopes of the canyon. The filling of the canyon will also assist in the stabilization of the Tarapaca landslide. The filled canyon/stream bed will be vegetated as a mitigation measure. **Subtask 10.5 Performance Testing and Demobilization.** The project will be inspected throughout the construction and in addition nine monitoring points will be accurately installed and regularly read before, during and after construction to measure any possible land movement. The establishment of environmental mitigation measures will be closely monitored for the required time frame to ensure compliance. By its nature, the storm drainage system cannot be tested until the first major storm after the completion of the project. Performance criteria will be established and the system will be monitored at that time to measure the success of the design and construction. Should remedial action be required, that will be undertaken at that time.	
	Budget Category (e): Environmental Compliance/Mitigation/Enhancement	
	Task 11: Environmental Compliance/Mitigation/Enhancement. Mitigation measures are required to provide re-vegetation of the streambed and affected canyon slopes (hydro-seed, planting and 5-year maintenance). BMP's will be implemented for project and are included in	

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	High-Level Activities/Milestones	**Deliverables**
	Mitigation Monitoring Program for water quality. No cultural resources were found to exist in proximity to location; no presence of Native American cultural resources was found. **Standards:** CEQA and NEPA requirements governing monitoring plans. **Status:** Will begin as outlined in CEQA/NEPA documents. **Reference:** PSR pg. 18—see Appendix A for details.	
	Budget Category (f): Construction Administration	
	Task 12: Construction Administration. CM to prepare and execute contracts; maintain project correspondence and records; process pay requests and change orders; manage inspection staff; document all plan changes; preparation of status reports; administer Contract Engineering and Inspection (CEI) contracts. **Standards:** Will follow standard construction management techniques and best management practices as established by the American Public Works Association (APWA), American Society of Civil Engineers (ASCE), and the City of Rancho Palos Verdes. **Status:** Will commence upon construction activities**.**	- Submission of reports, change orders; management plans; status and inspection reports; and contracts.